

What is claimed is:

1 1. A liquid crystal display device comprising:

2 a first substrate formed with display pixel electrodes  
3 thereon, said first substrate having a first irregular  
4 surface including line-shaped protrusions extending in one  
5 direction;

6 a second substrate arranged in an opposing relation to  
7 said first substrate, said second substrate having a second  
8 irregular surface including line-shaped protrusions  
9 extending perpendicularly to said one direction; and

10 liquid crystal disposed between said first substrate  
11 and said second substrate.

1 2. A liquid crystal display device as claimed in claim 1,  
2 wherein said first substrate and said second substrate have  
3 thickness distributions in which thickness' thereof vary in  
4 one direction, respectively, and which are substantially  
5 orthogonal each other.

1 3. A liquid crystal display device as claimed in claim 1,  
2 wherein said first substrate is provided with switching  
3 elements for on-off controlling respective said pixel  
4 electrodes.

1 4. A liquid crystal display device as claimed in claim 3,  
2 wherein each said switching element is a thin film  
3 transistor and said second substrate is formed with a color  
4 filter.

1 5. A liquid crystal display device as claimed in claim 1,  
2 wherein said first substrate is provided with a common

electrode arranged in parallel to said pixel electrodes to construct an active matrix substrate of In-Plane Switching system.

6. A liquid crystal display device as claimed in claim 1, wherein one of said first and second substrates has the thickness distribution changing along a longer side direction thereof, the other substrate has the thickness distribution changing along the shorter side thereof and the changing direction of the thickness distribution of said one substrate is substantially orthogonal to the changing direction of the thickness distribution of said the other substrate.

7. A fabrication method of a liquid crystal display device, comprising the steps of:

cutting apart a first rectangular substrate from a first raw glass substrate having a belt-shaped irregularity such that a longer side direction of said first rectangular substrate is coincident with a drawing direction of said first raw glass substrate;

cutting apart a second rectangular substrate from a second raw glass substrate having a belt-shaped irregularity such that a longer side direction of said second rectangular substrate becomes orthogonal to a drawing direction of said second raw glass substrate; and

arranging said first rectangular substrate in an opposing relation to said second rectangular substrate with a gap enough to accept a liquid crystal layer between said

16 first and second rectangular substrates and with the longer  
17 sides of said first and second rectangular substrates being  
18 in the same direction.

1 8. A fabrication method of a liquid crystal display  
2 device, as claimed in claim 7, wherein pixel electrodes, a  
3 common electrode and switching elements connected to  
4 respective said pixel electrodes are formed on one of said  
5 first and second rectangular substrates and a color filter  
6 is formed on said the other substrate.

1 9. A fabrication method of a liquid crystal display  
2 device, as claimed in claim 7, wherein a plurality of said  
3 first rectangular substrates are cut apart from said first  
4 raw glass substrate in the step of cutting said first  
5 rectangular substrate and a plurality of said second  
6 rectangular substrates are cut apart from said second raw  
7 glass substrate in the step of cutting said second  
8 rectangular substrates, said method further comprising,  
9 before the step of cutting said first and second  
10 rectangular substrates, the step of forming electrodes and  
11 switching elements on each of said first rectangular  
12 substrates and the step of forming a color filter layer on  
13 each of said second rectangular substrates.

1 10. A fabrication method of a liquid crystal display  
2 device, as claimed in claim 8, further comprising the steps  
3 of:

4 printing a seal material on said first rectangular  
5 substrate;

dispersing spacers on a surface of said second rectangular substrate;

adhering said first rectangular substrate to said second rectangular substrate by arranging said first and second rectangular substrates in an opposing relation with said seal material and said spacers being inside and hardening said seal material while applying a constant pressure between said first and second rectangular substrates; and

injecting liquid crystal material into said gap between said first and second rectangular substrates.